

What is claimed is:

1. A locking mechanism for selectively interlocking upper and lower tracks of a seat track assembly, said locking mechanism comprising:

5 a pin carrier having a body and at least one arm having an intermediate portion extending between a proximal end fixedly secured to said body and a distal end, said distal end of said arm having a wider profile than said intermediate portion to define a stop edge;

a mounting plate adapted to be fixedly secured to the upper track, said mounting plate having at least one slot having adjacent narrow and wide portions defining a stop surface due to the difference in size between said narrow and wide portions, said wide portion adapted to receive said distal end of said arm therethrough during assembly of said pin carrier and said mounting plate, said narrow portion adapted to slidably receive said intermediate portion arm therethrough for selective sliding movement of said pin carrier relative to said mounting plate, said stop surface engagable with said stop edge of said pin carrier to prevent removal of said arm from said slot; and

15 a plurality of pins slidably coupled to both said pin carrier and said mounting plate for movement in and out of locking engagement with the upper and lower tracks during corresponding movement of said pin carrier relative to said mounting plate.

2. A locking mechanism as set forth in claim 1, wherein each of said plurality of pins extend between opposing first and second end and include a raised step defining opposite first and second abutment surfaces, said first abutment surface engagable with said body of said pin carrier such that said plurality of pins move with said pin carrier relative to said mounting plate.

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3. A locking mechanism as set forth in claim 2 including a plurality of coil springs each energized between said second abutment surface of at least one of said plurality of pins and said mounting plate for continuously biasing apart said pin carrier and said mounting plate and for continuously biasing said plurality of pins toward said locking engagement with  
5 the upper and lower tracks.

4. A locking mechanism as set forth in claim 3 wherein said body of said pin carrier extends between first and second ends and includes a plurality of spaced apart support apertures formed in said body between said first and second ends for slidably supporting said  
10 respective plurality of pins.

5. A locking mechanism as set forth in claim 4 wherein said mounting plate extends between first and second ends and includes a plurality of spaced apart support apertures formed between said first and second ends axially aligned with said respective plurality of  
15 support apertures in said pin carrier for slidably supporting said respective plurality of pins.

6. A locking mechanism as set forth in claim 5 further including a lever actuator pivotally coupled to said mounting plate for movement about a pivot axis between locked and unlocked positions to accommodate movement of said pin carrier relative to said mounting  
20 plate.

7. A locking mechanism as set forth in claim 6 further including pivot pins pivotally interconnecting said lever actuator to each of said arms of said pin carrier and defining a pivot axis therebetween for moving said pins and pin carrier relative to said mounting plate in

response to pivotal movement of said lever actuator between said locked and unlocked positions.

8. A seat track assembly comprising:

5       a lower track having an outer distal wall, said outer distal wall having a plurality of locking windows formed therein;

          an upper track slidably coupled to said lower track for movement among a plurality of seating positions relative to said lower track, said upper track including a wall and a distal wall spaced apart from said wall for receiving said outer distal wall of said lower track  
10       therebetween during movement of said upper track relative to said lower track, said wall and said distal wall each having corresponding pluralities of first and second support apertures;

          a locking mechanism for selectively interlocking said upper and lower tracks, said locking mechanism having a plurality of pins selectively movable in and out of a locked position, wherein said plurality of pins extends through said locking window of said lower  
15       track and is supported by said first and second support apertures of said upper track in a double shearing condition to prevent sliding adjustment of said upper track relative to said lower track.

9. A seat track assembly as set forth in claim 8 wherein said locking mechanism  
20       allows incremental adjustment of said upper track relative to said lower track among said plurality of seating positions, wherein said plurality of seating positions are equally spaced by a predetermined adjustment increment.

10. A seat track assembly as set forth in claim 9 wherein each of said plurality of pins  
25       has a predetermined pin width and each of said plurality of locking windows has a

predetermined window width that is at least the sum of said predetermined pin width plus twice said predetermined adjustment increment.

11. A seat track assembly as set forth in claim 10 wherein each of said plurality of  
5 locking windows are spaced apart by a predetermined distance defining a land that no greater than three times said predetermined adjustment increment less said predetermined pin width.

12. A seat track assembly as set forth in claim 14 wherein said plurality of pins has a  
predetermined pin pitch defined by the distance between the centers of adjacent pins, said  
10 predetermined pin pitch no greater than three times said predetermined adjustment increment.

13. A seat track assembly as set forth in claim 12 wherein said second apertures are  
offset longitudinally relative to said first apertures to cause said plurality of pins to rotate into  
interference with said outer flange to minimize chuck between said upper and lower tracks.

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